

Table 2e
Screening Assessment Hazard Quotients for the Recreational Fisherman

Constituent of Potential Ecological Concern	Maximum Sediment Concentration (mg/kg)	Fish BAF (unitless)	Fish Concentration (mg/kg)	Risk-Based Screening Level (mg/kgBW/day)	Screening Hazard Quotient (unitless)	Fish BAF Reference
<u>Semi Volatiles</u>						
Acenaphthene	0.2	1.0	0.20	8.1	0.02	Default value
Anthracene	1.89	1.0	1.9	41.0	0.05	Default value
Benz[a]anthracene	6.23	1.0	6.2	0.0043	1448.8	Default value
Benz[ghi]perylene	3.35	1.0	3.4	0.0043	779.1	Default value
Benzo[a]pyrene	9.68	1.0	9.7	0.00043	22511.6	Default value
Benzo[b]fluoranthene	9.26	1.0	9.3	0.0043	2153.5	Default value
Benzo[k]fluoranthene	5.8	1.0	5.8	0.043	134.9	Default value
Dibenz[a,h]anthracene	0.56	1.0	0.56	0.00043	1302.3	Default value
Fluoranthene	9.03	1.0	9.0	5.4	1.7	Default value
Fluorene	0.76	1.0	0.76	5.4	0.14	Default value
Indeno[1,2,3-cd]pyrene	6.14	1.0	6.1	0.0043	1427.9	Default value
Phenanthrene	0.76	1.0	0.76	41.0	0.02	Default value
Pyrene	8.3	1.0	8.3	4.1	2.0	Default value
Naphthalene	0.58	1.0	0.58	2.7	0.21	Default value
2-Methylnaphthalene	0.75	1.0	0.75	0.54	1.4	Default value
<u>PCBs</u>						
Total PCBs	1.63	12.9	21.0	0.0016	13141.9	Oliver and Nimi, 1988
<u>Inorganics</u>						
Barium	302	1.0	302.0	27.0	11.2	Default value
Cadmium	3.27	0.16	0.52	0.14	3.7	Pascoe et al., 1996
Chromium	157.21	0.04	6.3	0.41	15.3	Krantzberg and Boyd, 1992
Copper	185.9	0.1	18.6	5.4	3.4	Krantzberg and Boyd, 1992
Lead	570.4	0.07	39.9	NV	NV	Krantzberg and Boyd, 1992
Manganese	681	1.0	681.0	19.0	35.8	Default value
Mercury	2.91	4.6	13.3	0.014	952.0	Cope et al., 1990
Nickel	88.4	1.0	88.4	2.7	32.7	Default value
Silver	14.45	1.0	14.5	0.68	21.3	Default value
Zinc	1457.29	0.15	218.6	41.0	5.3	Pascoe et al., 1996

RBSL - Risk based screening level obtained from the October 2007 version of EPA Region 3 RBC.

RBSL Notes:

- 1) All RBSLs are based on a cancer risk of 1×10^{-6} or a noncancer HQ of 0.1
- 2) Benzo(a)anthracene RBSL was used for benzo(g,h,i)pyrene
- 3) Anthracene RBSL was used for phenanthrene
- 4) Hexavalent chromium RBSL was used for chromium
- 5) Cadmium-food RBSL was used for cadmium
- 6) Manganese-food RBSL was used for manganese
- 7) Methylmercury RBSL was used for mercury
- 8) NV = No Value

For chemicals with a hazard quotient (HQ) of greater than 1.0, the HQ and the chemical name are shown in bold font.

Fish BAF is the "sediment bioaccumulation factor for fish" which is used to estimate the partitioning of various chemicals from sediment to fish tissue.
 Fish Concentration = sediment concentration x Fish BAF

Fish BAF References:

Default value = 1.0

Oliver, B.G. and A.J. Nimi. 1988. Trophodynamic Analysis of Polychlorinated Biphenyl Congeners and other Chlorinated Hydrocarbons in the Lake Ontario Ecosystem. Environmental Science and Technology. 22:388-397

Pascoe, G.A., R.J. Blanchet, and G. Linder. 1996. Food Chain Analysis of Exposures and Risks to Wildlife at a Metals-Contaminated Wetland. Archives of Environmental Contamination and Toxicology. 30:306-318.

Krantzberg, G. and D. Boyd. 1992. The Biological Significance of Contaminants in Sediment from Hamilton Harbor, Lake Ontario. Environmental Toxicology and

Cope, W.G., J.G. Weiner, and R.G. Rada. 1990. Mercury Accumulation in Yellow Perch in Wisconsin Seepage Lakes: Relation to Lake Characteristics. Environmental Toxicology and Chemistry. 9:931-940.